ISSN 0228-4111

NEWSLETTER OF THE LONDON CHAPTER,
ONTARIO ARCHAEOLOGICAL SOCIETY
c/o London Museum of Archaeology
1600 Attawandaron Road, London, ON N6G 3M6

December 2006 06-8

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Welcome Back. Speaker's Night resumes!

The next meeting of the London Chapter will be held on **Thursday, September 13, 2007**. The speaker will be **Rob MacDonald** of Archaeological Services Inc., who will talk on: ***The View from Mount Albion: Investigating an Early Paleo-Indian Site in the Upper Red Hill Valley, City of Hamilton.***

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HELP!
We are in desperate need of articles for **KEWA**.
Don't delay, submit yours today!

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The meetings will be held at 8 pm at the London Museum of Archaeology, 1600 Attawandaron Road, near the corner of Wonderland & Fanshawe Park Road, in the northwest part of the city.

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ANNUAL RATES

Student	$15.00
Individual	$18.00
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In one of her more memorable movie lines, hand on hip, Mae West said to Cary Grant "*I may have given up cigarettes but I didn't give up smokin'*." Mike Spence may have retired from the Department of Anthropology at UWO but he didn't give up bones. If proof were needed, this article documents one of Mike's post-retirement studies: the skeletal remains from the Public Burying Ground in Guelph.

The Skeletons from the Public Burying Ground of the City of Guelph, Ontario

Michael W. Spence, PhD

In October 2005 the London-based archaeological firm of D.R. Poulton & Associates Inc. was contracted to investigate a human burial that came to light when a City works crew repaired a sink hole in Baker Street in downtown Guelph. The triangular-shaped block bounded to the west by Baker Street has for some decades been used as a municipal parking lot. However, it has always been known to have been the site of the Public Burying Ground; it was established by the Canada Company in 1827, the year Guelph was founded by John Galt (Figure 1).

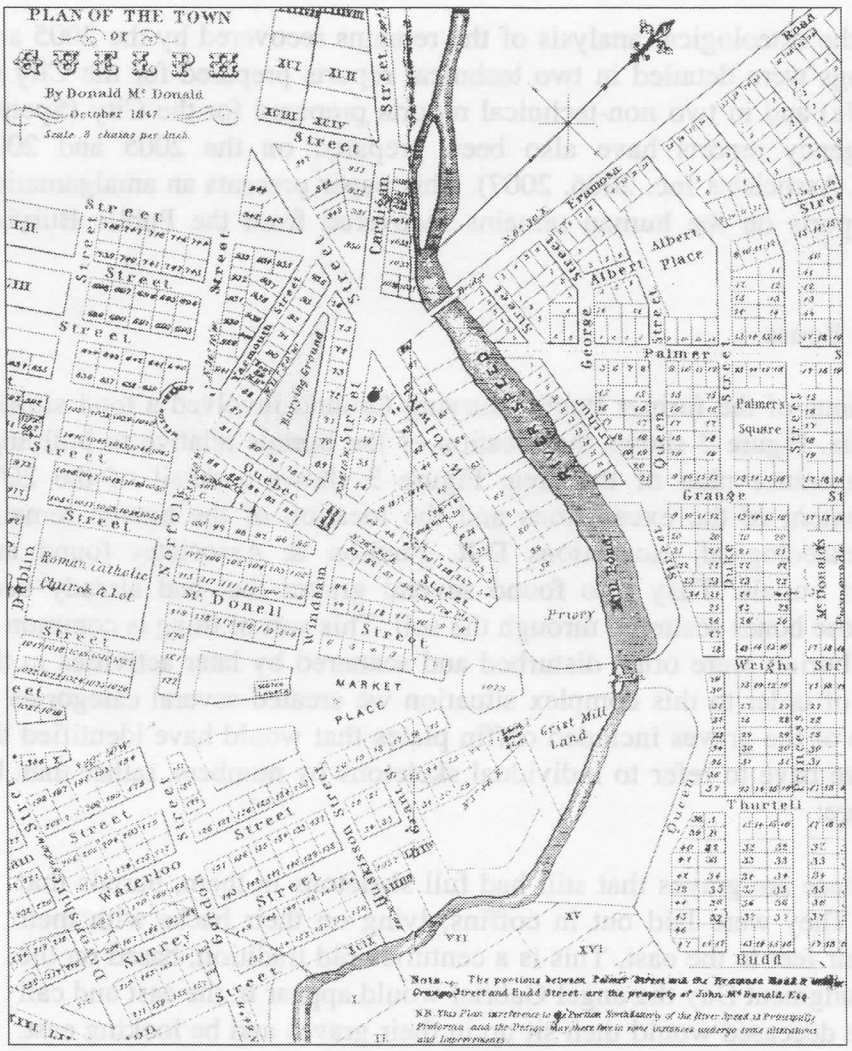

Figure 1: 1847 Plan of Downtown Guelph and the Public Burying Ground

The Public Burying Ground was used by the non-Catholic and non-Anglican residents of Guelph for 26 years, until 1853 when further burials there were prohibited. It was officially closed in 1879. From the mid 1850s through to the 1890s many burials in the cemetery were exhumed by the relatives of the deceased and moved to the Union Cemetery (now the Woodlawn Memorial Gardens), then located

two miles outside the city limits. In 1892 the Victoria Arena, a curling rink and skating arena, was built in the southern part of the former cemetery; it was flanked to the north and east by bowling greens. Construction of this facility destroyed a number of unexhumed burials. Still others were disturbed over the years by a factory complex constructed to the north, and by public works in the Baker Street right-of-way.

The investigation of the initial burial in October 2005 led to the discovery of a second burial in another nearby sink hole. The following year, in the summer of 2006, D.R. Poulton & Associates carried out a far more extensive excavation in the adjacent parking lot, which was slated for construction as a multi-storey parking facility. The 2005 and 2006 excavations of the former Public Burying Ground were conducted on behalf of the City of Guelph. In the course of the investigations, the firm recovered several disturbed burials and removed other intact burials that were threatened by future construction. The excavations also provided information on historic life and practices in early Guelph.

Michael Spence carried out the osteological analysis of the remains recovered by the 2005 and 2006 excavations. His findings were detailed in two technical reports prepared for the City of Guelph (Spence 2006a, 2007a) and in two non-technical reports prepared for the City (Spence 2006b, 2007b). Separate agency reports have also been prepared on the 2005 and 2006 excavations (D.R. Poulton & Associates Inc. 2006, 2007). This paper presents an amalgamation of the two non-technical reports on the human remains recovered from the Public Burying Ground.

The Recovered Burials and Bones

The 2005 and 2006 excavations of the former Public Burying Ground involved a total surface area of approximately 0.41 ha. Figure 2 shows the location of the burials relative to buildings depicted on a 1960 Fire Insurance plan of the area. Figure 3 shows a detail of the 2006 excavations, including the extent of the excavations and the location of the human remains recovered. During their archaeological excavations D.R. Poulton & Associates found and removed a number of intact burials. They also found several graves that had already been exhumed and a number of loose bones scattered through the soil. This sort of thing is common in old urban cemeteries where burials were often disturbed and scattered by later activities in the area. To bring some degree of order to this complex situation we created several categories of analysis. Unfortunately none of the graves included coffin plates that would have identified the names of the deceased, so we have to refer to individual skeletons by numbers, rather than by their names. The categories are:

1. Burials (B series). These are graves that still had full skeletons in them, burials that had not been exhumed. They were laid out in coffins, lying on their backs with their heads to the west and their feet to the east. This is a centuries-old tradition, based on the Christian belief that on Judgment Day the angel Gabriel would appear in the east and call the dead to Paradise. The deceased would then sit up in their graves and be looking east, toward Paradise. Suicides and murderers would be buried in the reverse orientation, with their heads to the east, so they would not be able to rise and enter Paradise.

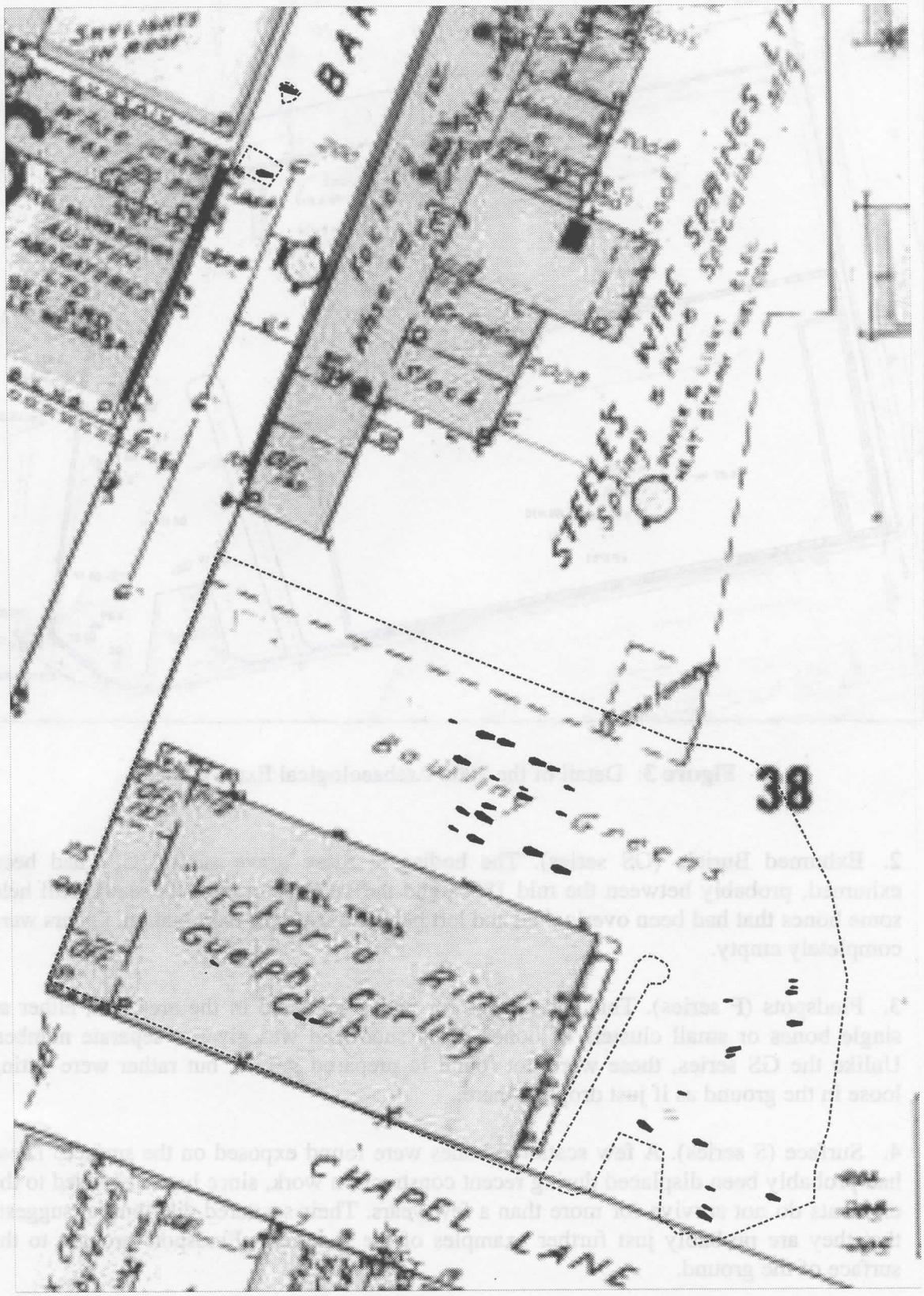

Figure 2: Location of Human Remains Relative to the 1960 Fire Insurance Map

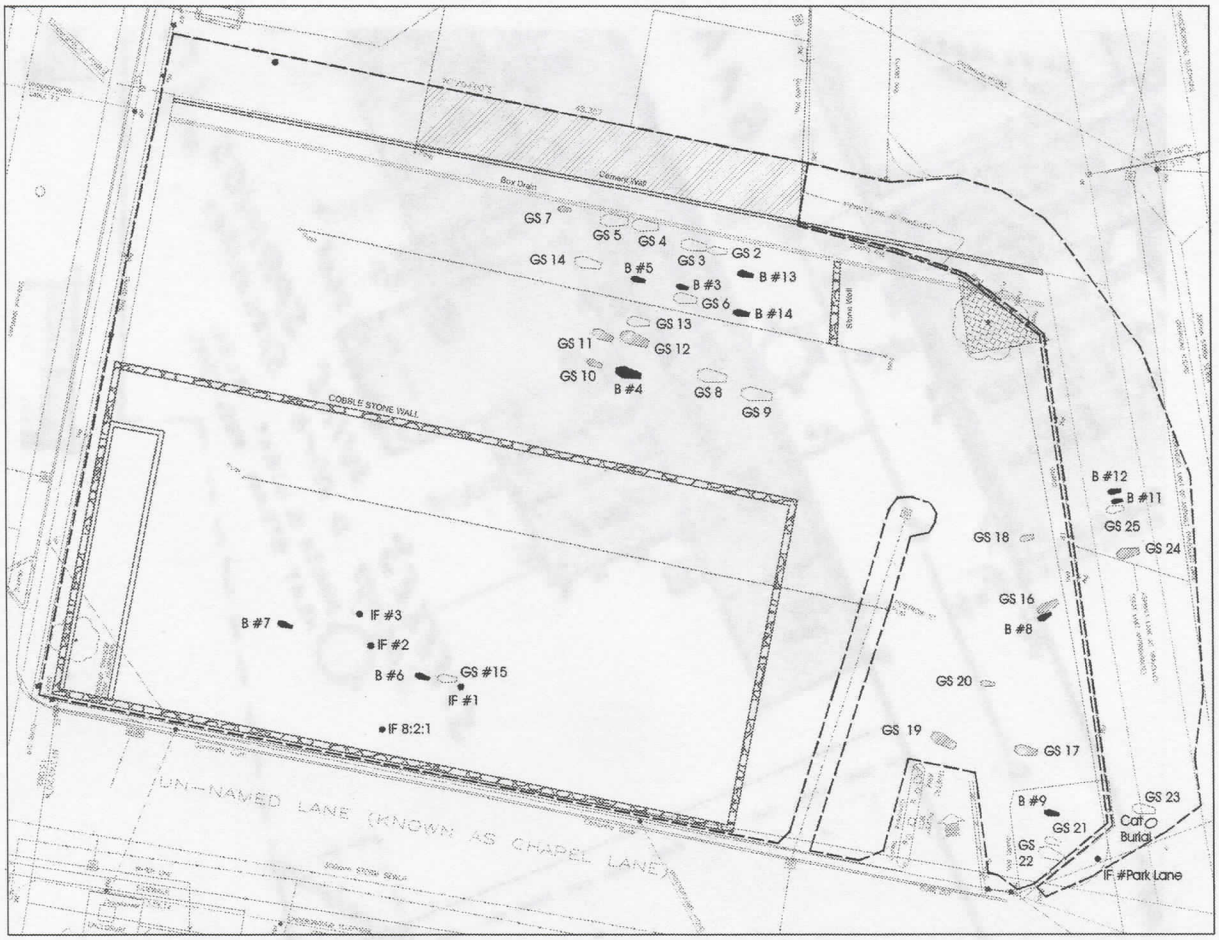

Figure 3: Detail of the 2006 Archaeological Excavations

2. Exhumed Burials (GS series). The bodies in these grave shafts (GS) had been exhumed, probably between the mid 1850s and the 1890s. Some of the shafts still held some bones that had been overlooked and left behind during the exhumation. Others were completely empty.

3. Findspots (F series). This category is for bones scattered in the area soil, either as single bones or small clusters of bones. Each such find was given a separate number. Unlike the GS series, these were not found in prepared graves, but rather were sitting loose in the ground as if just dropped there.

4. Surface (S series). A few scattered bones were found exposed on the surface. These had probably been displaced during recent construction work, since bones exposed to the elements do not survive for more than a few years. Their scattered distribution suggests that they are probably just further examples of the F series - Findspots brought to the surface of the ground.

In examining the skeletons from these various categories, we were interested in a number of things: their age, sex, health history, cause of death, etc. Our hope was to get some insights into the social history and quality of life of early to mid 19th century Guelph. Sex was usually identified through examination of the bones of the pelvis. In women the pelvis is adapted to childbirth, causing it to have a structure visibly different from the male pelvis. When there are no pelvic bones sex can sometimes still be seen by the size and robustness of other parts of the skeleton. Unfortunately, there is no reliable way to identify the sex of child skeletons - - they have to have passed through puberty first.

The ages of children can be determined with considerable accuracy from the size of their bones, particularly the lengths of the bones of the arms and legs. The different stages of development that their teeth go through also provide a good basis for age identification. In both cases it is biological development that is being measured, and it occurs at a fairly regular and well-known rate. For adults, alas, we are measuring deterioration, the progressive breakdown of the body. This biological process is more erratic than development, so the ages for adults are generally less exact than the ages we can assign to child skeletons.

Health and cause of death are more difficult to assess. Episodes of poor health often leave no traces in the bones. It takes a particularly prolonged and serious illness to affect the skeleton. Even then the evidence it leaves is often non-specific, that is, the skeletal changes could be due to a variety of different infections or diseases. It is the exception when some particular defects in the skeleton can actually be identified as the result of a particular disease. Many of the great killers of humanity (cholera, bubonic plague, smallpox, influenza) leave no evidence in the skeleton. When they strike a person, that person either dies or recovers before the bones are affected. These problems hamper our investigation of the health of past societies, like 19th century Guelph. Still, some health problems can be identified from the bones and teeth, for example tuberculosis, syphilis, and dental infection (cavities).

Burials (B series)

The burials of thirteen people were found and removed from the Public Burying Ground during the 2005 and 2006 archaeological excavations. The two interments excavated in October of 2005 both had been buried in coffins and were lying in the standard Christian position, extended on their backs with their heads to the west. Burial 2 (B2), which was located in the second sink hole excavated in 2005, had been badly disturbed. Only the lower legs were still intact and in their original location, and nothing but a few fragments of the rest of the skeleton were recovered. The size of the bones and the lack of arthritic involvement suggest that B2 was a young adult woman. Women in the first half of the 19th century faced a variety of perils: childbirth complications, cholera, etc. Without more of the skeleton, it is impossible to say how she died.

Burial 1 (B1), which was excavated by City workers in October 2005, was much more complete. The bones not found are mostly the small ones, especially those of the hands and feet, that are often overlooked by inexperienced people when burials are encountered. No coffin name plate or grave stone was found, so we cannot actually identify B1. However, because the B1 skeleton is more complete, we can say something about the person and his life. The pelvic bones, in fact, leave no doubt that B1 was a man.

There are several ways to determine the age of adult skeletons. Most of these are basically tracking the deterioration of the skeleton, clocking its gradual breakdown which, alas, starts in the mid-twenties. However, the rate of deterioration will vary from person to person, reflecting differences in genetics, lifestyle, health, etc. The estimates that the aging methods offer are thus rather variable, with wide margins of error. Generally anthropologists try to apply more than one method, and then look for their area of agreement. In the case of B1 three methods were used: changes at the ends of the ribs, changes in the joint between the pelvic bone and the sacrum, and changes where the pubic bones meet each other. The overlap of the results from these three falls in the 40-45 year range, so this is taken to be the likely age at death of B1.

Race, or ancestry, is notoriously difficult to determine from the skeleton. It really is only skin deep. Basically, the racial types we think we see in the people around us are really social constructions, not biological categories. In the case of B1, features around the mid-face and nose suggest European ancestry, but that identification is by no means conclusive.

There are several formulae for determining height from the long bones of the skeleton, though again with a range of variation. The length of B1's femur (thigh bone) suggests that he was about 5 feet 6 inches tall. Various facial measurements show that he had a long and relatively low head with a narrow face, a narrow nose, and wide eyes.

Not surprisingly for someone his age, B1 shows evidence of arthritis at a number of points in his skeleton. For the most part this would have caused only occasional minor discomfort, but two of the neck vertebrae and one finger bone also show eburnation, a polishing effect that occurs when the soft tissue between articulating bones has deteriorated to the point where the bones are actually rubbing against each other. These areas would have been rather painful.

The spinal column shows further evidence of arthritis, a degenerative kind called *spondylitis deformans*, with extensions of bone from the vertebral bodies that would eventually have locked them together. This is present in about 80% of men by the age of 50. More serious, and less common, is the presence of a disease called diffuse idiopathic skeletal hyperostosis, more informally known by its initials as DISH. It has caused the fusion, in two segments, of six vertebrae in the mid-back, considerably restricting the flexibility of the back (Figure 4). If B1 had lived a few years longer, this fusion would have spread to involve a

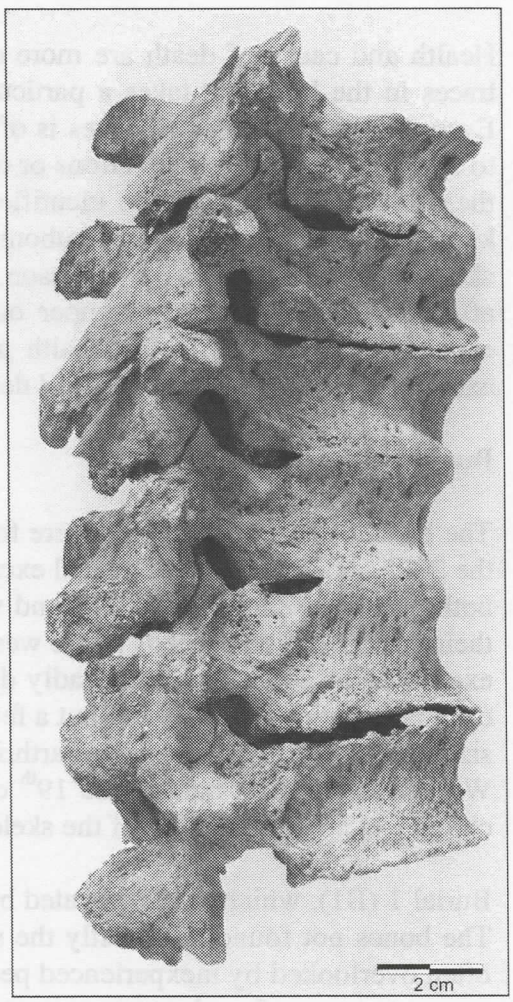

Figure 4: Burial 1: Lateral Views of the Fused Thoracic Vertebrae

total of eight contiguous vertebrae there. The disease is also expressed at some other points in the skeleton, for example by the development of spurs of excess bone on both heels.

Two other vertebrae, the second and third vertebrae in the neck, are also fused. In this case, however, the fusion is the result of a genetic condition, Klippel-Feil syndrome, rather than a disease (Figure 5). It probably caused no pain and had no ill effects other than a slight decrease in neck flexibility.

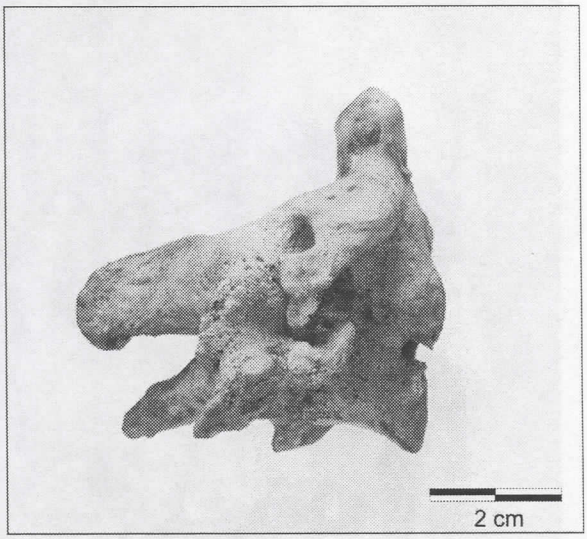

Figure 5: Burial 1: Fused Cervical Vertebrae

The bones at the top of the skull have a roughened appearance, the result of the deposition of additional bone there at some point in B1's past. This is commonly due to anaemia, which may be caused by a poor diet or by parasitic infection, or perhaps a combination of the two. There is also a series of six small hemispherical bumps of bone across the forehead. These would have caused no pain, nor had any ill effects on health. They seem to be a common feature in humans, a by-product of hominid evolution.

The teeth are another matter. Six had been lost before death, probably as a result of caries (cavities) and the abscesses that occur when they become advanced. Three other teeth show active caries which in two cases have destroyed the entire crowns of the teeth. One also had an abscess. Beyond the obvious and severe discomfort, these dental infections were quite dangerous before the development of antibiotics. They can spread from the mouth to other areas, like the mastoid processes, and can enter the bloodstream and even prove fatal.

Finally, B1 had suffered some trauma, though it had all healed well before death. An infection of the lower left leg may have been due to a blow there. One of the middle ribs had been broken by force applied to the right side of the back, though analysis was unable to determine whether that force was from a fall or a deliberate blow.

Two traumatic injuries, however, do indicate conflict. The nasal septum, the thin plate of bone that divides the nostrils, was broken and healed at an angle (Figure 6). That sort of damage is usually due to a deliberate blow to the face. Also, the right fifth metacarpal (the bony strut at the outer edge of the palm, supporting the little finger) had been badly broken, a "boxer's fracture" (Figure 7). This sort of fracture is usually a result of a poorly delivered punch. The fifth metacarpal is not directly supported by the bones of the wrist and forearm, so force exerted against it is not properly absorbed and results in the fracture of the bone. In the case of B1 it then healed badly, at an angle and shortened, with two new spurs of bone growing out from it into the muscles of the palm. The use of the right hand would have been restricted by pain and inflexibility.

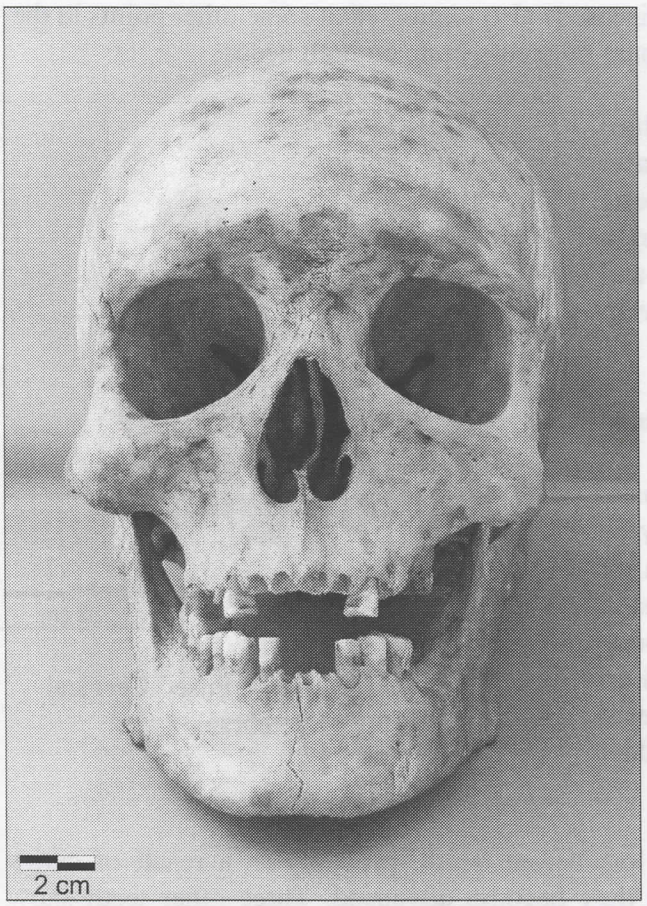

Figure 6: Burial 1: Anterior View of the Cranium

Despite his injuries, we cannot assume that B1 was some sort of pugnacious barroom brawler. Both of these injuries, the fractures of the nasal septum and the metacarpal, may well have been the result of a single event. The absence of more rib fractures, especially on the fronts of the ribs, and of other damage that could be attributed to assaults (e.g., breakage of the nasal bridge or finger bones) suggests that B1 was not a frequent fighter. Also, the term "boxer's fracture" is a bit of a misnomer. An experienced boxer knows to direct a punch so that the force falls on the well-supported knuckles of the index and middle fingers. The evidence, then, suggests that B1 may once have had the misfortune of getting into a fight, and fared so poorly in it that he never repeated the experience----could not repeat it, given the damage to his right hand.

Unfortunately, the analysis was unable to determine how B1 died. Many diseases leave no traces in the bones because death or recovery occurs too quickly for the bone to become involved. It is possible that one of his dental infections eventually did him in, though these are certainly not invariably fatal.

B6 is not exactly an official burial - - it is more like an informal reburial. It was found beneath the area where the Victoria Arena had been located, in a pit that did not have the size or shape of a formal grave shaft. Also, the skeleton was not complete and the bones were not in their proper positions, but instead were jumbled together in the pit. Probably B6 had originally been a normal cemetery burial, but during the construction of the arena in 1892 the workmen accidentally disturbed it. They then gathered together a number of the displaced bones, those that were large enough to catch their attention, and reburied them in a hastily dug pit. They missed a lot of the smaller bones, for example many of those from the hands and feet.

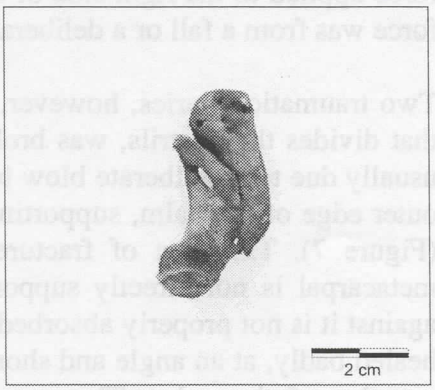

Figure 7: Right 5th Metacarpal

The major bones of the head, the skull and mandible of B6 are also missing from the pit. Their absence is more difficult to explain. Although the workmen may have

overlooked many of the small bones of B6, it is hard to believe that they didn't notice these two. One possible explanation is that workmen held them back from reburial, to give or sell them to somebody. They may have ended up gracing somebody's mantelpiece, a cabinet in a doctor's office, or even an artist's studio.

B6 was a woman who died in her early forties. The cause of her death is not known, perhaps some of the missing bones held some clues. One unusual feature of the skeleton is the presence of wear facets on the finger bones. These facets show that she often held both of her hands in a tightly flexed position, the fingers folded sharply back. This is like what medical specialists call "claw hand", a symptom of leprosy, and in fact the fingers of lepers do have these facets. However, B6 shows no other evidence of leprosy or of any other physical disorder that could lead to "claw hand." It is more likely that she was engaged in some sort of repetitious activity that required this hand position and that would have gradually led to the development of these facets on the fingers. Frequently holding the hand in a tight fist might have done it, but a 19th century Guelph woman probably did not do a lot of boxing. A more plausible explanation is that B6 was a washerwoman. Working clothes repeatedly over a washboard would have required a hand position like this.

B4 was a man who died at 45-50 years of age. His lower face had probably looked a little lopsided because sometime in his childhood the left side of his lower jaw had been broken. It did not grow properly after that, remaining shorter than the right side (Figure 8).

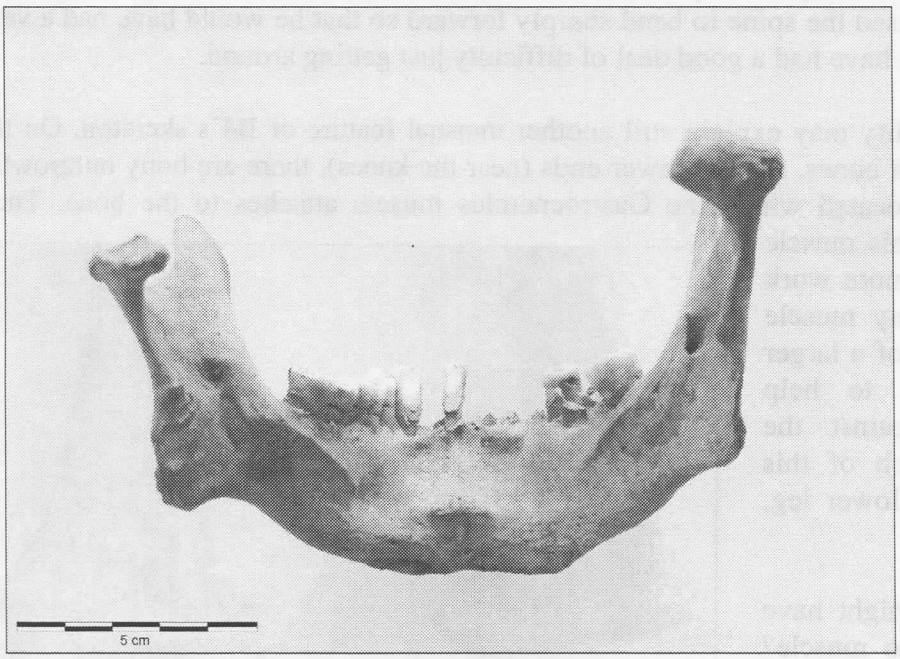

Figure 8 Burial 4: Posterior View of Mandible with Shortened Left Condylar Neck

B4's dental health was very poor. Six of his teeth had been lost sometime before his death, probably from infection. Of those that remained seven had cavities, in three cases severe enough to have destroyed the crowns of the teeth. The infection had apparently spread beyond his jaws. The right mastoid process, a bony protuberance on the lower side of the skull, had been invaded by the in-fection. As stated previously, in the early 19th century, before the use of antibiotics, infections that started in the teeth and then spread could eventually prove fatal. This may have been the cause of B4's death. Still, it was not the only threat he faced.

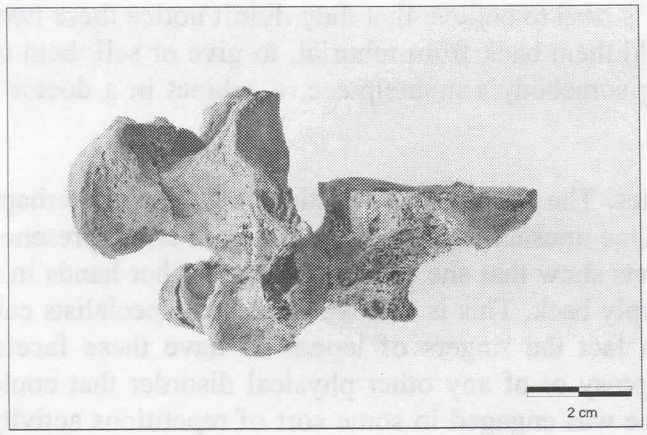

Figure 9: Burial 4: Lateral View of 13th Thoracic Vertebra

Many people of B4's age can be expected to suffer some back problems. In his case, though, they were severe. For one thing, he had an extra vertebra (Figure 9) in his lower back and an extra pair of ribs to go with it. This can lead to a somewhat weaker spine, more susceptible to strain. That tendency was probably worsened by some hard physical labour in his childhood or youth. Several of his lower vertebrae have cavities in their surfaces, the result of damage to the intervertebral disks that is often caused by lifting and carrying heavy loads. Also, the arch of his lowest vertebra had separated from its body, an uncoupling that destabilizes the lower spine and is usually due to prolonged strain in the younger years.

These physical problems would have weakened B4's back and caused him some pain, but they would not have killed him. Rather, he may have died of a more severe back problem - - spinal tuberculosis. The TB had mostly destroyed three of his lower back vertebrae and had damaged his lower ribs. It also caused the spine to bend sharply forward so that he would have had a very stooped posture. He must have had a good deal of difficulty just getting around.

This problem with mobility may explain still another unusual feature of B4's skeleton. On the backs of both of his thigh bones, at their lower ends (near the knees), there are bony outgrowths (Figure 10). They are located where the Gastrocnemius muscle attaches to the bone. Their presence indicates that this muscle was doing a good deal more work than usual. Stress on any muscle causes the development of a larger bony attachment area, to help anchor the muscle against the increased strain. The job of this muscle is to move the lower leg, pulling it back and up.

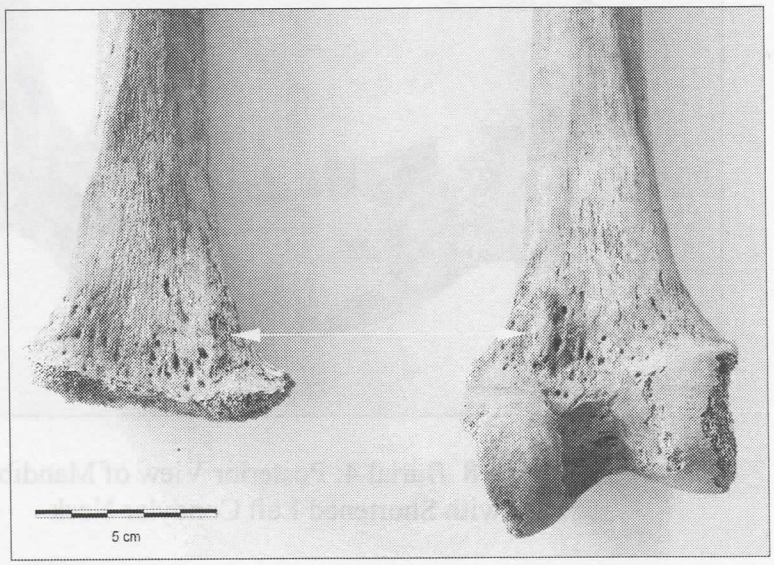

Figure 10: Burial 4: Femora with Pronounced Tubercles of Bone

What kind of activity might have caused this stress on the muscle? One plausible candidate is the use of a "Bath chair." This is a special chair, named after its use by 18th-19th century invalids at the famous hot springs of the City of Bath in England. It is an early version of the wheelchair, with wheels at the

base of each of its four legs. Either an attendant would push it around or the chair's occupant would move it by "walking" it with their lower legs. This motion would have put a constant strain on the Gastrocnemius.

The TB may have killed B4, or an infection spreading from his teeth may have been responsible for his death. Both presented serious threats to his health. However, TB was likely the primary cause. It was clearly advanced and very destructive, and in the 19th century it was frequently fatal.

Also among the intact burials removed from the area are nine children ranging in age from newborn to about 4 or 5 years of age. Of these, seven were infants, dying in their first year of life. In fact, four of them were newborns who either died at birth or within a couple of weeks after birth.

Two of the newborns, B11 and B12, were buried side-by-side, though in separate graves. When people are buried this closely together in a cemetery it usually indicates that they were members of the same family. Also, both of these infants had metal shroud pins (used to hold their burial shrouds together) in exactly the same place, on the right side of the chest. They may have been born together, as twins. However, they did not die at the same time. The bones and teeth of B12 are slightly more developed than those of B11. Probably B11 had not survived birth while B12 died about two weeks after that.

B13 was about 4-5 years old. Death was the result of a severe blow to the back of the head by a hard object, like a hammer or stone. The blow landed high on the right side, leaving a circular depression 30 mm in diameter in the skull. A fracture in this area is usually the result of child abuse. However, none of the bones of B13 show evidence of prior abuse in the form of healed fractures. Without a clear history of abuse, accident cannot be ruled out.

Exhumed Grave Shafts (GS series)

A number of graves had evidently been exhumed, probably between the mid 1850s and the 1890s. They are here called the Grave Shaft (GS) series. Thirteen of them still contained some bones, usually the smaller ones that are most likely to be overlooked in an exhumation. These at least allow us to know the age of the person that had been buried there. There were six adults and seven subadults, only two of whom were infants (one year or less in age). None were newborn.

Another eleven grave shafts were completely empty. Either these exhumations had been done more carefully or they were done before any serious decomposition had taken place and the bodies were still intact. Without bones we cannot be sure of the ages of the people who had originally been buried in them. However, we have one clue in the size of the grave shafts. Here we are making the not-so-risky assumption that the municipal employees digging the graves were not going to do any more work than absolutely necessary - - smaller graves for smaller people. Judging by the sizes of the shafts that still had some bone remnants in them, any shaft over 192 cm in length had held an adult while any shaft less than 140 cm long had held a child. We cannot reliably identify the age category of people in shafts between 140 and 192 cm long. Using these guidelines, it seems that the empty shafts had originally contained six adults and two

children, plus three uncertain cases. We cannot say exactly how old the two children were. One, with a grave shaft only 92 cm long, was probably an infant or young child.

When these figures are added to the shafts that still contained some bone remnants, the total for the exhumed burials is 12 adults and 9 subadults, with only 2 or 3 in the infant category. This contrasts with the figures for intact burials (the B series), those who were simply left in place when the cemetery was closed: 4 adults and 9 subadults, of whom 7 (77%) were infants of one year or less. It looks as if adults were more likely to be exhumed than subadults, and infants were the least likely age category to be exhumed for removal to another cemetery.

This relative lack of concern for infants is also visible when we look at the spatial distribution of the graves. Some were placed very close together, indicating that they held members of the same family. In three cases, the graves of unexhumed infants were right beside exhumed graves that had contained older individuals. Two of these exhumed graves had contained adults while one was for either an adult or an older child. The people who conducted these exhumations seem to have made a deliberate choice to leave the infants behind when they removed the older people. On the other hand, in a fourth case an infant and an adult in adjoining graves had both been exhumed. It seems, then, that we can't formulate any hard and fast rules for 19th century Guelph. Infants were not always left behind, nor were adults always removed. These may have been general tendencies, but there were still a number of exceptions.

Findspots (F series)

The Findspot series refers to eight finds of human bones that were lying loose in the site soils. They had not been placed in prepared pits or graves. These usually consisted of a single bone or a few bones clustered haphazardly together. They are a little difficult to explain. One possibility is that they represent skeletal material that was scattered and lost during exhumations. This seems unlikely, though, since most of the bones are the larger ones, not the small bones that usually get overlooked during exhumations. Probably the best explanation is that they are the remnants of burials that had been intact but were then disturbed and scattered by later construction in the area. Half of the Findspots were in the soil beneath where the arena had been, so they may have been disturbed during its construction - - like B6, discussed earlier, which was in the same area.

Since they are only scattered and very incomplete skeletons we can't say much about these people. Five of them were adults, two were teenagers and one was an infant. One of the adults (F3), a man, had a build-up of bone on his right forearm that suggests his right arm was being repeatedly flexed against some weight or resistance. The left arm does not show the same use. Perhaps his occupation involved working some sort of lever or gear, or he may have been a musician who played an instrument like the violin.

Surface (S series)

The Surface series consists of only three finds scattered on the surface of the area, probably remnants of previously disturbed burials that had been brought to the surface by recent construction activities. They include one adult, one child and one infant. The infant (S1), about

one year old, is represented by only two bones, the left and right thigh bones. One of these has a fracture at the upper end. This particular kind of fracture is usually due to child abuse, and is caused by wrenching the leg or shaking the baby while holding the leg. The break was starting to heal, so the infant probably lived a few weeks after the episode of abuse.

The Threats to Life in Early Guelph

A series of cemetery skeletons does not offer the most appropriate evidence for evaluating the health of the residents of 19th century Guelph. After all, the people in cemeteries are the ones in their age category who did not survive, so they must not have been among the healthier members of the community. Still, they can tell us something about the threats to health that the people of Guelph had to face at that time. These threats included tuberculosis and tooth decay, both potentially fatal in those pre-antibiotic days.

Threats to life and limb also included trauma, whether accidental or deliberately inflicted. As described earlier, B1 had suffered a beating that left him alive but with several broken bones and a disabled right hand. In addition, there are three possible cases of child abuse in the present collection. The infant S1 is pretty clearly a case of abuse, dying only a few weeks after receiving a broken leg. The older B13 child died from a blow to the head, but it might have been an accident since B13's bones show no history of abuse. The B4 man had suffered a broken jaw in childhood, but the analysis could not determine how old he was at the time or how it happened.

The part of the Public Burying Ground that we excavated had contained the bodies of 22 adults, 2 teenagers and 21 children. The teenage years are generally a time of low mortality. They had survived the dangers of childhood and had not yet encountered the threats of adult life. It is no surprise to find so few of them in the cemetery.

The 21 children may have been frailer than their contemporaries who survived. It is often difficult to identify the actual cause of death in subadult skeletons, but their ages at death offer some clues. Of the 19 children whose ages are known, 11 were infants (one year or less), 3 were young children (between one and three years) and 5 were older children (4-9 years). That first year of life, then, seems to have been the most dangerous - - much as it is today.

This infant category can be still further subdivided. Four of the eleven are newborns who either died at birth or within a few weeks. Death among newborns is usually caused by inherent factors, like genetic defects or congenital problems rooted in the mother's health or physical condition during pregnancy. As infants get safely past those first few weeks, the dangers that they face change to external ones - - infection, disease, malnutrition, etc. These were what threatened the seven older infants.

One particularly difficult transition that children must endure is weaning. As they shift from mother's milk to prepared foods they are much more likely to suffer from infection, digestive problems, diarrhea and nutritional deficiencies. We know from historic sources and biochemical analyses of skeletons that this transition in 19th century southern Ontario was usually completed by the end of the first year of life. We can't say for sure that these seven Guelph infants

succumbed to problems related to weaning. We know, in fact, that S1 was a victim of abuse. Still, it seems likely that weaning was involved in some of these deaths.

The skeletons from the Public Burying Ground will soon be reburied in another Guelph cemetery, Woodlawn Memorial Gardens. However, that may not be our last chance to find out about early Guelph from the skeletons of its residents. Nineteenth century burials appear with surprising frequency in southern Ontario cities as building foundations, street construction, swimming pools and even backyard gardens intrude on forgotten cemeteries. If we are vigilant we can rescue those remains, as we did these, and learn from them before laying them to rest once more.

Acknowledgements

The investigations documented in this paper would not have been possible without the generous financial and logistical support provided by the City of Guelph. In particular, Rob Broughton, Derek McCaughan, Louis Payne, Roy Garbotz and Ian Panabaker of the City are to be thanked for the assistance they rendered to the investigations. My gratitude is also extended to the staff of D.R. Poulton & Associates Inc. for providing information on the background research and fieldwork, notably Dana Poulton, Christine Dodd, Jim Sherratt, Lorelyn Giese and Sherri Prowse. I would also like to thank Andrew Nelson and Michelle Bleuze of the Department of Anthropology, University of Western Ontario, for providing X-rays of bones from Burial 1 and Burial 13.

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